arrangements. In these cases the best that can be accomplished is to draw the position of the orifice back up into the ferrule internal bore to a point where there is sufficient diametric height to accommodate all of the necessary valve structural elements, including a sufficiently large orifice and a steep enough slope for the drainage trough. This situation is less than optimal since positioning the orifice up inside a ferrule places it in a "quiet" zone which will tent to stray in character from the more highly mixed body proper of the process.

IN THE CLAIMS

Please amend the claims as follows:

1. (AMENDED) A valve for insertion into a ferrule having a given internal diameter, the valve having a sample cavity, a sampling orifice and a drain outlet, the sampling orifice and drain outlet being operatively connected to the sample cavity, a diameter of the sampling orifice being determined by the following formula:

Dov < or = Dfv - [(Dr1+Dr2) + (Dv1+Dv2) + (Dw1+Dw2) + (Ds1+Ds2) + Div + Ddv], wherein Dov is the diametric height for orifice construction, Dfv is the ferrule bore diametric height, Dr1 and Dr2 are the diametric spaces required to seal a body of the valve with a bore of the ferrule, Dv1 and Dv2 are the diametric spaces required to form upper and lower margins, respectively, of an annular wall of the valve body, Dw1 and Dw2 are the diametric spaces required to form an outer wall at the upper and lower margins of the valve body, respectively, Ds1

and Ds2 are the diametric spaces required to allow for an interstitial space between an inside diameter of the ferrule and an outside diameter of the valve body along the upper and lower margins of the valve body, respectively, Div is the diametric height lost due to an inclination of the bore, and Ddv is the diametric height to assure channel drainage.

Please add the following claims:

--2. A valve for insertion into a ferrule having a given internal diameter, the valve having a sample cavity, a sampling orifice and a drain outlet, the sampling orifice and drain outlet being operatively connected to the sample cavity, a diameter of the sampling orifice being determined by the following formula:

Dov < or = Dfv – [Div + Ddv + C], wherein Dov is the diametric height for orifice construction, Dfv is the ferrule bore diametric height, Div is the diametric height lost due to an inclination of the bore, Ddv is the diametric height to assure channel drainage, and C is a constant for a particular application including the diametric height for wall thickness, the diametric height for sealing arrangements, the diametric height for interstitial spaces and the diametric height for an annular seal.

3. A valve installed in an inclined ferrule, comprising:

a valve body;

a drainage trough formed in said valve body; and

an orifice, said orifice opening at a front of the valve body, a lower margin of said orifice forming a beginning of said drainage trough, said lower margin being located at a predetermined point along a length of an internal bore of the ferrule,

wherein a vertical plane passing through said predetermined point on the lower margin passes through a point along a bottom margin of the bore of the ferrule, and Lf is a length from a point at a rear margin of the ferrule to said point along said bottom margin, and

wherein in order for a freely draining trough to be formed in the valve body from the lower margin of the orifice to the rear margin of the ferrule, a vertical position of the lower margin must be higher than a value of Div calculated at said point along the bottom margin, for a flush-mounting valve, the value of Div can be calculated:

$$Div = Lf \, SIN \, (Aa)$$

where Aa is an angle of an axis of the bore of the ferrule.

Sub B4

4. A valve installed in an inclined ferrule, comprising:

a valve body, said valve body having an internal drainage path with an angle of declination greater than an angle of inclination of an axis of an internal bore of the ferrule:

5. The valve according to claim 4, wherein said angle of declination of said drainage path of said valve body includes an additional angle of declination Ab, wherein a total angle of declination of the drainage trough is the sum {(-Aa) + Ab}, wherein Aa is the angle of inclination of the internal bore of the ferrule.

G7

6. The valve according to claim 4, wherein said valve body includes an orifice formed therein, said orifice opening into a process, said drainage path beginning at a lower margin of said orifice and passing above and beyond a lower rear margin of the ferrule.

Sub B5

7. A valve assembly, comprising:

a ferrule installed in an inclined orientation into a wall in a vessel or conduit, said ferrule having an internal bore having a first, process side and a second, non-process side;

a valve fitted into said internal bore of said ferrule, said valve having a valve body with an internal cavity, said valve body having an orifice in a front wall thereof, said orifice opening to said process side of said internal bore of said

ferrule, and a drain passage opening to the rear thereof, said drain passage being connected to the orifice by a drainage trough, said drainage trough beginning at a bottom margin of the orifice and ending at an opening of said drain passage, said drainage trough continuously descending at an angle greater than an angle of inclination (Aa) of the internal bore of said ferrule and passing above a lower rear margin Pr of the internal bore of the ferrule.--